# EXHIBIT T

## EXHIBIT 16

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Entropic Communications, LLC v. Cox Communications, Inc., et al. Case 2:23-cv-01049-JWH-KES (C.D. Cal.)

#### U.S. Patent No. 11,399,206 (the "'206 Patent") Exemplary Infringement Chart

Cox operates and maintains a nationwide television and data network through which it sells, leases, and offers for sale products and services, including the Technicolor CGM4981, Technicolor CGM4331, Technicolor CGM4141, Technicolor CVA4004, ARRIS / Surfboard TM3402, ARRIS / Surfboard G36, ARRIS / Surfboard G54, ARRIS / Surfboard S33, ARRIS / Surfboard CM8200, ARRIS / Surfboard G34, ARRIS / Surfboard SB8200, ARRIS / Surfboard DG2460, ARRIS TM9202, Hitron CODA56, Hitron CODA, Humax HGD310, Motorola B12, Motorola MB8611, Motorola MG8725, Motorola MB8600, Motorola MG8702, Netgear CM2000, Netgear C7800, Netgear CAX30, Netgear CAX80, Netgear CBR750, Netgear CM1000, Netgear CM1000v2, Netgear CM1100, Netgear CM1200, Netgear CM2500, Netgear CM3000, Ubiquiti UCI, ARRIS / Surfboard TG2472, ARRIS / Surfboard SBG7400AC2, ARRIS / Surfboard SBG7600AC2, Motorola MB7621, Motorola MG7700, Netgear C6900, Netgear C7000v2, Netgear C7500, Netgear CBR40, Netgear CM600, Netgear CM700, TP-LINK TC-7650, ARRIS / Surfboard SB6183, ARRIS / Surfboard SBG6900, Asus CM16, Motorola MB7420, Motorola MG7540, Motorola MG7550, Netgear C6230, Netgear C6250, Netgear C6300, Netgear C6300v2, Netgear CM500, TP-LINK TC-7620, TP-LINK CR500, TP-LINK CR700, TP-LINK CR1900, SMC D3CM1604, Zoom 5370, and products that operate in a similar manner ("Accused Cable Modem Products"), as well as the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner ("Accused Set Top Products"). Cox provides cable television and internet services ("Accused Services") via the lease, sale, and/or distribution of the Accused Cable Modem Products and/or the Accused Set Top Products. Cox literally and/or under the doctrine of equivalents infringes the claims of the '206 Patent by making, using, selling, offering for sale, and/or importing the Accused Services, Accused Cable Modem Products, and/or the Accused Set Top Products.

As shown below in the chart with exemplary support, the Accused Services infringe at least claims 13, 14, 19, 21, 23, 25, 26, 31, 34, 35, 38, 39, 44, 47, and 48 of U.S. Patent No. 11,399,206 ("'206 Patent"). The '206 Patent was filed January 28, 2022, issued July 26, 2022, and is entitled "Method for Receiving a Television Signal." The '206 Patent claims priority to U.S. Patent Application Serial No. 17/217,244, filed on Mar. 30, 2021; U.S. Patent Application Serial No. 16/430,506, filed on Jun. 4, 2019; U.S. Patent Application Serial No. 15/792,318, filed Oct. 24, 2017; U.S. Patent Application Serial No. 14/948,881, filed Nov. 23, 2015, U.S. Patent Application Serial No. 14/617,973, filed on Feb. 10, 2015; U.S. Patent Application Serial No. 13/962,871, filed on August 8, 2013; U.S. Patent Application Serial No. 12/762,900, filed on April 19, 2010; and U.S. Provisional Patent Application No. 61/170,526, filed April 17, 2009.

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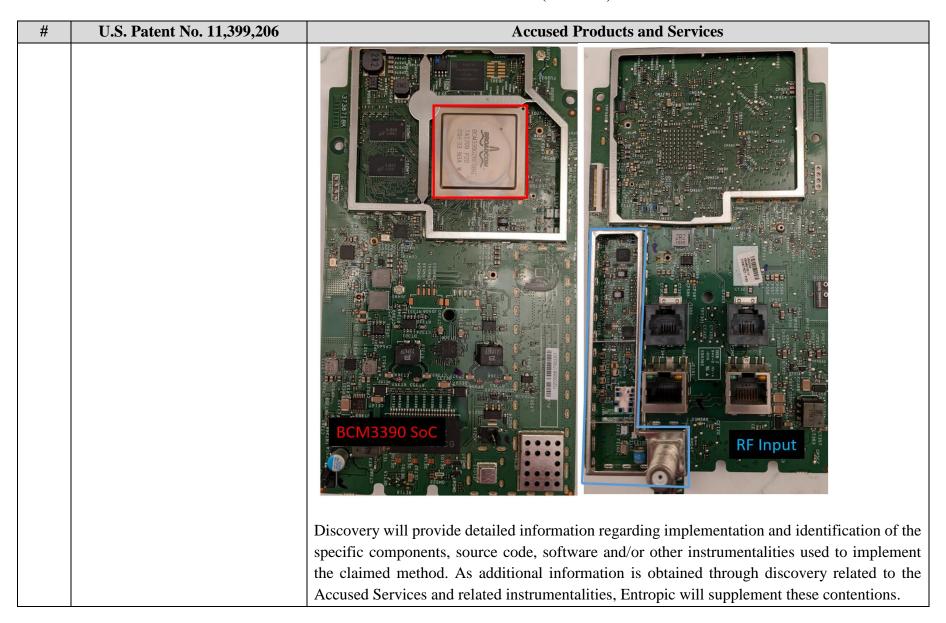
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The Accused Services perform the claimed methods using, for example, the Accused Set Top Products and/or the Accused Cable Modem Products. The Accused Services infringe the claims of the '206 Patent, as described below, either directly under 35 U.S.C. § 271(a), or indirectly under 35 U.S.C. §§ 271(b)–(c).

<b>U.S. Patent No. 11,399,206</b>	Accused Products and Services
13. A method comprising:	The Accused Services are provided by the claimed system by utilizing, for example, the Accused Set Top Products, which include at least one set top box ("STB") located at each subscriber location, including, for example, the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANC STB, Pace PX022ANM STB, and products that operate in a similar manner, and/or the Accused Cable Modem Products including, for example, the Technicolor CGM4981, Technicolor CGM4331, Technicolor CGM4141, Technicolor CVA4004, ARRIS / Surfboard TM3402, ARRIS / Surfboard G36, ARRIS / Surfboard G54, ARRIS / Surfboard S33, ARRIS / Surfboard CM8200, ARRIS / Surfboard G34, ARRIS / Surfboard SB8200, ARRIS / Surfboard DG2460, ARRIS TM9202, Hitron CODA56, Hitron CODA, Humax HGD310, Motorola B12, Motorola MB8611, Motorola MG8725, Motorola MB8600, Motorola MG8702, Netgear CM2000, Netgear C7800, Netgear CAX30, Netgear CAX80, Netgear CBR750, Netgear CM1000, Netgear CM1000v2, Netgear CM1100, Netgear CM1200, Netgear CM2500, Netgear CM3000, Ubiquiti UCI, ARRIS / Surfboard TG2472, ARRIS / Surfboard SBG7400AC2, ARRIS / Surfboard SBG7600AC2, Motorola MB7621, Motorola MG7700, Netgear C6900, Netgear C7000v2, Netgear C7500, Netgear CBR40, Netgear CM600, Netgear CM700, TP-LINK TC7650, ARRIS / Surfboard SBG183, ARRIS / Surfboard SBG6900, Asus CM16, Motorola MB7420, Motorola MG7540, Motorola MG7550, Netgear C6230, Netgear C6250, Netgear C6300, Netgear C6300v2, Netgear CM500, TP-LINK TC-7620, TP-LINK CR500, TP-LINK CR700, TP-LINK CR1900, SMC D3CM1604, Zoom 5370, and products that operate in a similar manner, located at each subscriber location.  By way of example, the Technicolor CGM4141 cable modem is charted herein. As described below, the Technicolor CGM4141 has a Broadcom BCM3390 SoC. On informed belief, all devices deployed by or enabled by Cox that contain the BCM3383, BCM3384, and BCM33843 series chips operate substantially the same as the BCM3390 series chips for purposes of the '206
	13. A method comprising:

#	U.S. Patent No. 11,399,206	Accused Products and Services
		that impacts infringement of the '206 Patent, documents describing the operation of the BCM33843 SoC equally describe the operation of the BCM3390 SoC.
		Therefore, the Technicolor CGM4141 is representative of all Accused Set Top Products and Accused Cable Modem Products, including those having BCM3383, BCM3384, BCM33843, or BCM3390 SoCs.
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
13a	receiving an input signal from a cable network;	The Accused Set Top Products and the Accused Cable Modem Products receive an input signal from a cable network as described below.
		Specifically, the Technicolor CGM4141 has applicable circuitry and/or software modules constituting wideband ADC, see 13b below. For example, the Technicolor CGM4141 has a Broadcom BCM3390 SoC, highlighted in red below. The Technicolor CGM4141 has at least one RF connector, highlighted in blue, operable to receive an input signal from a cable network.

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#	U.S. Patent No. 11,399,206	Accused Products and Services
13b	digitizing all received channels in the input signal via a wideband an- alog-to-digital converter (ADC),	The Accused Set Top Products and the Accused Cable Modem Products digitize said received signal to generate a digitized signal.
	wherein the received channels comprise a plurality of desired channels and a plurality of undesired channels;	The Technicolor CGM4141 includes applicable circuitry and/or software modules providing a wideband ADC, for example a Broadcom BCM3390 SoC. The Technicolor CGM4141 receives the entire ~1GHz downstream spectrum of a Cox cable plant. The entire downstream spectrum includes received channels, including desired and undesired channels. The Technicolor CGM4141, using its applicable circuity and/or software modules, digitizes the received signal to generate a digitized signal.
		"The new BCM3384 DOCSIS®/Euro-DOCSIS™ 3.0 cable gateway SoC combines Broadcom's Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band concurrent Wi-Fi, a custom, dedicated applications processor and integrated DECT 6.0 CAT-iq 2.0 Broadcom's new BCM33843 is pin compatible Broadcom is now sampling [as of Jan 08, 2031] the BCM3384 and BCM33843" (ENTROPIC_COX_002016 at ENTROPIC_COX_002017)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.

#	U.S. Patent No. 11,399,206	Accused Products and Services
13c	digitally down converting each de-	The Accused Set Top Products and the Accused Cable Modem Products digitally down convert
	sired channel, of the plurality of	each desired channel, of the plurality of desired channels, to generate a plurality of digital chan-
	desired channels, to generate a plu-	nel outputs as described below.
	rality of digital channel outputs;	
	and	Specifically, the Technicolor CGM4141 includes has applicable circuitry and/or software mod-
		ules constituting a mixer module operating on the digitized signal. For example, the applicable
		circuitry and/or software modules of the Technicolor CGM4141 utilize advanced signal pro-
		cessing techniques, including a mixer, which can be used to digitally downconvert the plurality
		of desired channels. For example, the Technicolor CGM4141 receives an analog signal that
		creates a digital representation of the entire 1GHz downstream spectrum of the input signal. The
		composite broadband signal contains a plurality of received channels, some of which are desired
		channels and some of which are undesired channels. The Technicolor CGM4141 tunes the re-
		sulting series of binary values within the composite digital broadband signal, and shifts (i.e.,
		downconverts) the frequency of the channels desired to baseband, which constitutes the digital
		channel outputs. For example, as described below, applicable circuitry and/or software modules
		of the Broadcom BCM3390 SoC includes a mixer module (highlighted below in red) and a filter
		(highlighted below in green) used to frequency shift (i.e., downconvert) the digitized channels
		in the digitized input signal from a higher frequency to a lower frequency (i.e., a baseband fre-
		quency).

#	U.S. Patent No. 11,399,206	Accused 1	Products and Services
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Part Capture	Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROP	PIC_COX_002012, annotated)
		technology directly samples and digitized plant, providing access to any channel	annology and remote diagnostics: Integrated on-chip es the entire 1GHz downstream spectrum of a cable anywhere. Remote diagnostics provides real time, lysis capabilities, without effecting user service on any PIC_COX_002018)
		specific components, source code, softw the claimed method. As additional inform	ion regarding implementation and identification of the vare and/or other instrumentalities used to implement nation is obtained through discovery related to the Acies, Entropic will supplement these contentions.
13d	providing the plurality of digital	1	used Cable Modem Products provide the plurality of
	channel outputs via a serial inter-	desired channels via a serial interface as	described below.
	face.		M4141, using its applicable circuity and/or software om a filter to one or more demodulators. On informed

#	U.S. Patent No. 11,399,206	Accused Products and Services
		belief, the output is via a serial interface. For example and on informed belief, the Arris AX013ANM, using applicable circuitry and/or software modules contained in the BCM3390 SoC, outputs the digital datastream from the filter (highlighted below in green) to the demodulators (highlighted below in purple) via a serial interface.
		Full-Band Capture Digital Tuner Architecture
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)  Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
14	14. The method of claim 13, wherein the method comprises: communicating the input signal from a cable network connector to	The Accused Set Top Products and Accused Cable Modem Products communicate the input signal from a cable network connector to the wideband ADC via at least one of an analog amplifier and an analog filter as described below.  Specifically, the Tophicalor CGM4141 has applicable circuitry and/or software modules con
	the wideband ADC via at least one of an analog amplifier and an analog filter.	Specifically, the Technicolor CGM4141 has applicable circuitry and/or software modules constituting at least an analog amplifier. For example, the Technicolor CGM4141, via applicable

#	U.S. Patent No. 11,399,206	Accused Products and Services
		circuitry and/or software modules of its BCM3390 SoC, has at least an analog amplifier, high-lighted in yellow below.  Full-Band Capture Digital Tuner Architecture
		Analog Domain  Digital Domain  Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)  Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
19	19. The method of claim 13, wherein the method comprises: demodulating each digitally down converted, desired channel to generate a plurality of demodulated channels.	The Accused Set Top Products and Accused Cable Modem Products demodulate each digitally down converted, desired channel to generate a plurality of demodulated channels as described below.  Specifically, the Technicolor CGM4141 has applicable circuitry and/or software modules constituting a plurality of demodulators. For example, the Arris Technicolor CGM4141, via applicable circuitry and/or software modules of its BCM3390 SoC, has a plurality of demodulators, highlighted in purple below. The demodulators are operable to demodulate the desired channels.

#	U.S. Patent No. 11,399,206	Accused Pr	oducts and Services
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA  POST PRINCIPLE STATE OF THE BANG Capture	Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC	C_COX_002012, annotated)
		nology directly samples and digitizes the eproviding access to any channel anywhere.	ogy and remote diagnostics: Integrated on-chip techentire 1GHz downstream spectrum of a cable plant, Remote diagnostics provides real time, unobtrusive ies, without effecting user service on any of the 24 C_COX_002018)
		specific components, source code, softwar the claimed method. As additional information	regarding implementation and identification of the re and/or other instrumentalities used to implement tion is obtained through discovery related to the Acs, Entropic will supplement these contentions.
		Cases Services and related instrainmentalities	o, zaropie m supprement these contentions.
21	21. The method of claim 13, wherein: the plurality of desired channels comprises at least one cable broadcast channel.	For the Accused Set Top Products, the plura broadcast channel as described below.	ality of desired channels comprises at least one cable

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#	U.S. Patent No. 11,399,206	Accused Products and Services
		Specifically, Cox provides cable television services, including viewing and recording of desired television content. The plurality of desired channels includes at least this desired television content, which constitutes at least one cable broadcast channel.  "Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV <sup>TM</sup> fast channel change technology."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)

#	U.S. Patent No. 11,399,206	Accused Products and Services
		Arris XG1v3 High Definition DVR Receiver
		Share or Print This Article
		Details
		CONTOUR CO
		Receiver Capabilities
		✓ HD Capable
		✓ Up to 6 simultaneous DVR recordings
		✓ Up to 1000 hours of SD recording
		✓ Up to 500 hours of HD recording
		Note: Estimated storage will vary with a mix of HD and SD recordings.
		(ENTROPIC_COX_001968 at ENTROPIC_COX_001968)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
23	23. The method of claim 13,	The Accused Set Top Products are a device comprising a digital video recorder (DVR) that
	wherein: the method is performed	performs the method as described below.
	by a device comprising a digital	
	video recorder (DVR).	See 25e.

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#	U.S. Patent No. 11,399,206	Accused Products and Services
		Arris XG1v3 High Definition DVR Receiver  Share or Print This Article
		Details
		CONTOUR CONTOUR
		Receiver Capabilities
		✓ HD Capable
		✓ Up to 6 simultaneous DVR recordings ✓ Up to 1000 hours of SD recording
		✓ Up to 500 hours of HD recording
		Note: Estimated storage will vary with a mix of HD and SD recordings.
		(ENTROPIC_COX_001968 at ENTROPIC_COX_001968)
25pre	25. A method for receiving a tele-	The Accused Services perform the claimed method utilizing, for example, the Accused Set Top
	vision (TV) signal comprising:	Products, which include at least one set top box ("STB") located at each subscriber location,
		including, for example, the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC
		STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and
		products that operate in a similar manner, and products that operate in a similar manner.
		By way of example, the Arris AX013ANM is charted herein. As described below, the Arris AX013ANM has a Broadcom BCM33843 SoC. On informed belief, the Arris AX013ANM is

#	U.S. Patent No. 11,399,206	Accused Products and Services
		representative of all Accused Set Top Products, including those having BCM3383, BCM3384,
		BCM33843, or BCM3390 SoCs.
25a	receiving an input signal from a ca-	The Accused Set Top Products receive an input signal from a cable network as described below.
	ble network;	
		Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-
		ing a wideband ADC. For example, the Arris AX013ANM has a Broadcom BCM33843 SoC,
		shown in red in the annotated photograph below. The Arris AX013ANM has at least one RF
		connector, shown in blue in the annotated photograph below, that couples to a cable network
		owned and/or operated by Cox. The Arris AX013ANM receives an input signal from the cable
		network.

#	U.S. Patent No. 11,399,206	Accused Products and Services
		UIIIIU UIIIIU BCN33843 SoC RF Input
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)

#	U.S. Patent No. 11,399,206	Accused	Products and Services
		"Bandwidth flexibility: Supports DOCS	IS and digital video on any frequency eliminating lim-
		itations of "block" tuners. When combin	ned with Broadcom's set-top box SoC with fast acquisi-
		tion technology, video channels can be p	pre-tuned and users can enjoy the experience of Broad-
		com's FastRTV <sup>TM</sup> fast channel change to	echnology."
		(ENTROPIC_COX_002016 at ENTRO)	PIC_COX_002018)
25b	digitizing a contiguous band of frequencies in the input signal via a	_	a contiguous band of frequencies in the input signal via (ADC), wherein the contiguous band of frequencies
	wideband analog-to-digital con-		et in the input signal and the received channels comprise
	verter (ADC), wherein the contig-	_	rality of undesired channels as described below.
	uous band of frequencies com-	a prarairty of desired enamies and a pra-	rainty of unaconed chainless as described octow.
	prises all received channels that	Specifically, the Arris AX013ANM has	applicable circuitry and/or software modules constitut-
	exist in the input signal and the re-		e Arris AX013ANM, using applicable circuitry and/or
	ceived channels comprise a plural-	_	I33843 SoC, provides a wideband ADC, highlighted in
	ity of desired channels and a plu-		digitizes a contiguous band of frequencies in the input
	rality of undesired channels;	_	itutes all received channels, which includes desired and
		undesired channels.	,
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA	Demods xN
		Full-Band Capture	
			All Digital Tuner
		(ENTROPIC_COX_002010 at ENTRO	PIC_COX_002012, annotated)

#	U.S. Patent No. 11,399,206	Accused Products and Services
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV <sup>TM</sup> fast channel change technology."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
25c	concurrently selecting each of the plurality of desired channels from the input signal without selecting any of the plurality of undesired channels; and	The Accused Set Top Products concurrently select each of the plurality of desired channels from the input signal without selecting any of the plurality of undesired channels as described below.  Specifically, the Arris AX013ANM has applicable circuitry and/or software modules configured to concurrently selecting each of the plurality of desired channels from the input signal without selecting any of the plurality of undesired channels. For example, the Arris AX013ANM, using applicable circuitry and/or software modules contained in the BCM33843 SoC, provides full band capture digital tuning of the input signal. On informed belief, full band capture digital tuning includes concurrently selecting each of the plurality of desired channels from the input signal without selecting any of the plurality of undesired channels.

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#	U.S. Patent No. 11,399,206	Accused Products and Services
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV <sup>TM</sup> fast channel change technology."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
25d	providing the plurality of desired channels,	The Accused Set Top Products provide the plurality of desired channels, as described below.  Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constituting a digital frontend that concurrently selects and provides each of the plurality of desired channels without providing any of the plurality of undesired channels. For example, the Arris AX013ANM, using applicable circuitry and/or software modules contained in the BCM33843 SoC, provides full band capture digital tuning of the input signal. On informed belief, full band capture digital tuning includes providing the desired channels. For example, The Arris AX013ANM has applicable circuitry and/or software modules operable to process a television channel to recover content carried on the plurality of desired channels.

U.S. Patent No. 11,399,206	Accused Products and Services
	"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
	"Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV <sup>TM</sup> fast channel change technology."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
	Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
wherein the method is performed by a device comprising a digital video recorder (DVR).	The Accused Set Top Products are a device comprising a digital video recorder (DVR) that performs the method as described below.  Specifically, the Arris AX013ANM constitutes a DVR capable of storing programming on its hard drive.
	wherein the method is performed by a device comprising a digital

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#	U.S. Patent No. 11,399,206	Accused Products and Services
		Arris XG1v3 High Definition DVR Receiver  Share or Print This Article  Details
		Receiver Capabilities  In the HD Capable  Up to 6 simultaneous DVR recordings  Up to 1000 hours of SD recording  Up to 500 hours of HD recording  Note: Estimated storage will vary with a mix of HD and SD recordings.  (ENTROPIC_COX_001968 at ENTROPIC_COX_001968)
		(ENTROLIE_CON_001500 in ENTROLIE_CON_001500)
26	26. The method of claim 25, wherein the method comprises: communicating the input signal from a cable network connector to the wideband ADC via at least one of an analog amplifier and an analog filter.	The Accused Set Top Products communicate the input signal from the cable network connector to the wideband ADC via at least one of an analog amplifier and an analog filter as described below.  Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constituting at least an analog amplifier. For example, the Arris AX013ANM, via applicable circuitry and/or software modules of its BCM33843 SoC, has at least an analog amplifier, highlighted in yellow below.

#	U.S. Patent No. 11,399,206	Accus	ed Products and Services
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA PROOFFICE AND PROPERTY OF THE Band Capture	Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTF	ROPIC_COX_002012, annotated)
		specific components, source code, so the claimed method. As additional into	mation regarding implementation and identification of the oftware and/or other instrumentalities used to implement formation is obtained through discovery related to the Actalities, Entropic will supplement these contentions.
31	31. The method of claim 25, wherein the method comprises: demodulating, via each demodulator of a plurality of demodulators, a desired channel, of the plurality of desired channels.	tors, a desired channel, of the pluralit Specifically, the Arris AX013ANM h ing a plurality of demodulators. For	odulate, via each demodulator of a plurality of demodulaty of desired channels as described below.  has applicable circuitry and/or software modules constitute example, the Arris AX013ANM, via applicable circuitry
	uesneu channeis.		33843 SoC, has a plurality of demodulators, highlighted in operable to demodulate the desired channels.

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#	U.S. Patent No. 11,399,206	Accused Pr	oducts and Services
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA PROTOTO PARTIES AND PARTIE	Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC	C_COX_002012, annotated)
		nology directly samples and digitizes the eproviding access to any channel anywhere.	gy and remote diagnostics: Integrated on-chip techentire 1GHz downstream spectrum of a cable plant, Remote diagnostics provides real time, unobtrusive ies, without effecting user service on any of the 24 C_COX_002018)
		itations of "block" tuners. When combined	
		* *	n regarding implementation and identification of the re and/or other instrumentalities used to implement

#	U.S. Patent No. 11,399,206	Accused Products and Services	
		the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.	
		The state of the s	
34	34. The method of claim 25, wherein the method comprises: providing the plurality of desired channels via a serial interface.	described below.	
		Full-Band Capture Digital Tuner Architecture	
		Analog Domain  Digital Domain  Demods xN  All Digital Tuner	
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)	
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.	

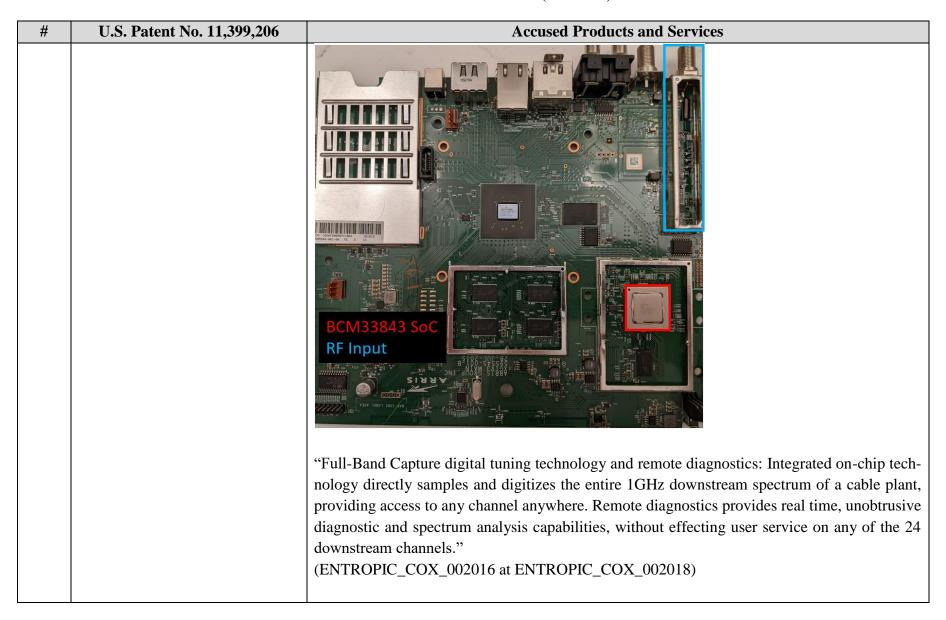
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#	U.S. Patent No. 11,399,206	Accused Products and Services
35	35. The method of claim 25, wherein: the plurality of desired channels comprises at least one cable broadcast channel.	The plurality of desired channels comprises at least one cable broadcast channel as described below.  Specifically, the Arris AX013ANM provides cable television services, including viewing and recording of desired television content. The plurality of desired channels includes at least this desired television content, which constitutes at least one cable broadcast channel.  "Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)  "Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating lim-
		itations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTV <sup>TM</sup> fast channel change technology."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)

#	U.S. Patent No. 11,399,206	Accused Products and Services
		Arris XG1v3 High Definition DVR Receiver  Share or Print This Article
		Receiver Capabilities  HD Capable  Up to 6 simultaneous DVR recordings  Up to 1000 hours of SD recording  Up to 500 hours of HD recording  Note: Estimated storage will vary with a mix of HD and SD recordings.
		(ENTROPIC_COX_001968 at ENTROPIC_COX_001968)  Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
38pre	38. A method comprising:	The Accused Services perform the claimed method utilizing, for example, the Accused Set Top Products, which include at least one set top box ("STB") located at each subscriber location, including, for example, the Arris AX013ANC STB, Arris AX013ANM STB, Pace PX022ANC

#	U.S. Patent No. 11,399,206	Accused Products and Services
		STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and
		products that operate in a similar manner, and products that operate in a similar manner.
		By way of example, the Arris AX013ANM is charted herein. As described below, the Arris
		AX013ANM has a Broadcom BCM33843 SoC. On informed belief, the Arris AX013ANM is
		representative of all Accused Set Top Products, including those having BCM3383, BCM3384,
		BCM33843, or BCM3390 SoCs.
38a	receiving an input signal from a ca-	The Accused Set Top Products receive an input signal from a cable network as described below.
	ble network;	
		Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-
		ing a wideband ADC. For example, the Arris AX013ANM has a Broadcom BCM33843 SoC,
		shown in red in the annotated photograph below. The Arris AX013ANM has at least one RF
		connector, shown in blue in the annotated photograph below, that couples to a cable network
		owned and/or operated by Cox. The Arris AX013ANM receives an input signal from the cable
		network.

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#	U.S. Patent No. 11,399,206	Accused Products and Services
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating lim-
		itations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisi-
		tion technology, video channels can be pre-tuned and users can enjoy the experience of Broad-
		com's FastRTV™ fast channel change technology."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
8b	digitizing all received channels in	The Accused Set Top Products digitize all received channels in the input signal via a wideband
	the input signal via a wideband an-	analog-to-digital converter (ADC), wherein the received channels comprise a plurality of de-
	alog-to-digital converter (ADC),	sired channels and a plurality of undesired channels as described below.
	wherein the received channels	
	comprise a plurality of desired	Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-
	channels and a plurality of unde-	ing a wideband ADC. For example, the Arris AX013ANM, using applicable circuitry and/or
	sired channels; and	software modules contained in the BCM33843 SoC, provides a wideband ADC, highlighted in
		orange below. The Arris AX013ANM digitizes all received channels, which includes desired
		and undesired channels.
		Full-Band Capture Digital Tuner Architecture
		Analog Domain Digital Domain
		LNA BELLEND Demods
		xN xN
		Pull-Band Capture*
		All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)
		digitizing all received channels in the input signal via a wideband analog-to-digital converter (ADC), wherein the received channels comprise a plurality of desired channels and a plurality of unde-

#	U.S. Patent No. 11,399,206	Accused Products and Services
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive
		diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24
		downstream channels."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating lim-
		itations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisi-
		tion technology, video channels can be pre-tuned and users can enjoy the experience of Broad-com's FastRTV <sup>TM</sup> fast channel change technology."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement
		the claimed method. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
38c	digitally down converting each de-	The Accused Set Top Products digitally down convert each desired channel, of the plurality of
	sired channel, of the plurality of	desired channels, to generate a plurality of digital channel outputs as described below.
	desired channels, to generate a plu-	
	rality of digital channel outputs,	Specifically, the Arris AX013ANM includes has applicable circuitry and/or software modules
		constituting a mixer module operating on the digitized signal. For example, the applicable cir-
		cuitry and/or software modules of the Arris AX013ANM utilize advanced signal processing
		techniques, including a mixer, which can be used to digitally downconvert the plurality of de-
		sired television channels. For example, the Arris AX013ANM receives an analog signal that
		includes a plurality of television channels and creates a digital representation of the entire 1GHz downstream spectrum of the analog signal. The composite broadband signal contains a plurality
		of digital QAM channels, some of which are desired channels and some of which are undesired
		of digital QAM chainlets, some of which are desired chainlets and some of which are undesired

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#	U.S. Patent No. 11,399,206	Accused Products and Services
		channels. The Arris AX013ANM tunes the resulting series of binary values within the composite digital broadband signal, and shifts (i.e., downconverts) the frequency of the QAM channel desired to baseband, which constitutes the digital channel outputs. For example, as described below, applicable circuitry and/or software modules of the Broadcom BCM33843 SoC includes a mixer module (highlighted below in red) and a filter (highlighted below in green) used to frequency shift (i.e., downconvert) the digitized QAM channels in the composite broadband signal from a higher frequency to a lower frequency (i.e., a baseband frequency).
		Full-Band Capture Digital Tuner Architecture
		Analog Domain  Digital Domain  Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)
		"The new BCM3384 DOCSIS®/Euro-DOCSIS™ 3.0 cable gateway SoC combines Broadcom's Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band concurrent Wi-Fi, a custom, dedicated applications processor and integrated DECT 6.0 CAT-iq 2.0 Broadcom's new BCM33843 is pin compatible Broadcom is now sampling [as of Jan 08, 2013] the BCM3384 and BCM33843" (ENTROPIC_COX_002016 at ENTROPIC_COX_002017)

#	U.S. Patent No. 11,399,206	Accused Products and Services
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip
		technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable
		plant, providing access to any channel anywhere. Remote diagnostics provides real time,
		unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any
		of the 24 downstream channels."
		(ENTROPIC_COX_002016 at ENTROPIC_COX_002018)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement
		the claimed method. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
38d	wherein the method is performed	The Accused Set Top Products are a device comprising a digital video recorder (DVR) that
	by a device comprising a digital	performs the method as described below.
	video recorder (DVR).	
		Specifically, the Arris AX013ANM constitutes a DVR capable of storing programming on its
		hard drive.

#	U.S. Patent No. 11,399,206	Accused Products and Services	
		Arris XG1v3 High Definition DVR Receiver  Share or Print This Article	
		Details	
		Receiver Capabilities   HD Capable	
		<ul> <li>✓ Up to 6 simultaneous DVR recordings</li> <li>✓ Up to 1000 hours of SD recording</li> <li>✓ Up to 500 hours of HD recording</li> <li>Note: Estimated storage will vary with a mix of HD and SD recordings.</li> </ul>	
		(ENTROPIC_COX_001968 at ENTROPIC_COX_001968)	
39	39. The method of claim 38, wherein the method comprises: communicating the input signal from a cable network connector to the wideband ADC via at least one of an analog amplifier and an analog filter.	to the wideband ADC via at least one of an analog amplifier and an analog filter as described below.  Specifically, the Arris AX013ANM has applicable circuitry and/or software modules constitut-	

#	U.S. Patent No. 11,399,206	Accused Products and Services	
		Full-Band Capture Digital Tuner Architecture	
		Analog Domain  LNA  LNA  Robert Stand Capture	Digital Domain  Demods xN  All Digital Tuner
		<u> </u>	mation regarding implementation and identification of the
		the claimed method. As additional inf	oftware and/or other instrumentalities used to implement formation is obtained through discovery related to the Actalities, Entropic will supplement these contentions.
44	44. The method of claim 38, wherein the method comprises: demodulating each digitally down	generate a plurality of demodulated channels described below.	
	converted, desired channel to generate a plurality of demodulated channels.	ing a plurality of demodulators. For and/or software modules of its BCM3	has applicable circuitry and/or software modules constitutexample, the Arris AX013ANM, via applicable circuitry 33843 SoC, has a plurality of demodulators, highlighted in modulate the desired channels to generate demodulated

#	U.S. Patent No. 11,399,206	Accused Pr	oducts and Services
		Full-Band Capture Digital Tuner Architecture	
		Analog Domain	Digital Domain
		LNA Full Band Capture	Demods xN  All Digital Tuner
		(ENTROPIC_COX_002010 at ENTROPIC	C_COX_002012, annotated)
		nology directly samples and digitizes the exproviding access to any channel anywhere.	gy and remote diagnostics: Integrated on-chip techentire 1GHz downstream spectrum of a cable plant, Remote diagnostics provides real time, unobtrusive ies, without effecting user service on any of the 24 C_COX_002018)
		itations of "block" tuners. When combined	
		_	n regarding implementation and identification of the re and/or other instrumentalities used to implement

#	U.S. Patent No. 11,399,206	Accused Products and Services	
		the claimed method. As additional information is obtained through discovery related to the Ac-	
		cused Services and related instrumentalities, Entropic will supplement these contentions.	
47	47. The method of claim 38, wherein the method comprises: providing the plurality of digital channel outputs via a serial inter-	The Accused Set Top Products provide the plurality of digital channel outputs via a serial interface as described below.  More specifically, the Arris AX013ANM, using its applicable circuity and/or software modules,	
	face.	outputs the digital datastream from a filter to one or more demodulators. On informed belief,	
		the digital datastream is output via a serial interface. For example and on informed belief, the	
		Arris AX013ANM, using applicable circuitry and/or software modules contained in the	
		BCM33843 SoC, outputs the digital datastream from the filter (highlighted below in green) to	
		the demodulators (highlighted below in purple) via a serial interface.	
		Full-Band Capture Digital Tuner Architecture	
		Analog Domain Digital Domain	
		LNA Demods xN  All Digital Tuner	
		(ENTROPIC_COX_002010 at ENTROPIC_COX_002012, annotated)	
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed method. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.	

#	U.S. Patent No. 11,399,206	Accused Products and Services
48	48. The method of claim 38, wherein: the plurality of desired channels comprises at least one cable broadcast channel.	The plurality of desired channels comprises at least one cable broadcast channel as described below.  Specifically, the Arris AX013ANM provides cable television services, including viewing and recording of desired television content. The plurality of desired channels includes at least this desired television content, which constitutes at least one cable broadcast channel.  "Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere. Remote diagnostics provides real time, unobtrusive diagnostic and spectrum analysis capabilities, without effecting user service on any of the 24 downstream channels."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)  "Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned and users can enjoy the experience of Broadcom's FastRTVTM fast channel change technology."  (ENTROPIC_COX_002016 at ENTROPIC_COX_002018)

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